SECTION 1—AEROLOGY.

SOLAR RADIATION INTENSITIES AT MOUNT WEATHER, VA., DURING JULY, AUGUST, AND SEPTEMBER, 1914.

By HERBERT H. KIMBALL, Professor of Meteorology.

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In Table 1 are summarized the solar radiation measurements made at Mount Weather, Va., with a Marvin pyrheliometer during July, August, and September, 1914. For details relative to the standardization of the pyrheliometer, the number and frequency of radiation measurements, and the method of interpolating readings to the air masses given in the heading of the table the reader is referred to pages 138 and 310 of the current volume of this REVIEW.

Both the maximum and the mean radiation intensities measured in July and August, 1914, exceed those for the corresponding months in 1912 and 1913 and equal those for these months in years previous to 1912. The average intensities for September, 1914, exceed those for any previous September, and the measurements on the 28th were the highest ever obtained at Mount Weather.

From Table 10, page 483, of the current volume of this REVIEW it is seen that the maximum daily radiation for the third decade in September, 1914, which was recorded on the 28th, amounted to 535 calories per square centimeter of horizontal surface. This is the greatest daily amount ever recorded at Mount Weather during the third decade of September. Also, during the hour ending at 1 p. m. of the 28th the total radiation was 75.1 calories, which is likewise a maximum rate for this decade. Of this amount about 5 calories, or only 7 per cent, was received diffusely from the sky, a result that is comparable with Abbot's measurements on Mount Wilson. (See Table 12, page 486, in the current volume of this REVIEW.

In July and August, 1914, the skylight polarization, with the sun at zenith distance 60°, measured at a point 90° from the sun and in the same vertical circle, was below the average for these months, but higher than in the corresponding months of 1912 and 1913. In September it was above the average, and on the 28th measured 72 per cent before noon and 73 per cent after noon. These are the highest polarization measurements ever obtained at Mount Weather in September, and they have only been exceeded by measurements made in October, 1911.

At the end of September, 1914, solar radiation measurements were discontinued at Mount Weather. Most of the radiation apparatus has since been installed at the American University, Washington, D. C., where solar radiation investigations will be conducted by the Weather Bureau in coöperation with the university.

TABLE 1.—*Solar radiation intensities at Mount Weather, Va., during July, August, and September, 1914.*

[Gram-calories per minute per square centimeter of normal surface.]

Date.	Air masses.										
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
1914.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.
A. M.											
July 3	.....	1.25	1.10	0.97	0.89	0.82	0.74	.....	.....	.....	.....
11	1.27	1.07	0.86	.....	0.59	0.49	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	0.69	0.63	0.58	0.53	.....	.....
18	1.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	1.42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	1.27	.....	0.95	0.91	0.79	0.75	0.70	0.65	0.61	.....	.....
21	1.28	1.14	0.99	0.86	0.76	0.69	0.63	0.57	.....	.....	.....
22	1.28	1.22	1.14	1.04	0.94	0.87	0.82	0.77	0.74	0.68	0.65
27	1.30	1.14	0.98	0.78	0.68	.....	.....	.....	.....	.....	.....
29	1.40	1.30	1.21	1.13	1.06	0.99	0.93	0.88	0.84	0.80	0.76
30	1.34	1.24	1.15	1.07	0.98	0.91	0.86	0.82	0.77	0.72	0.65
31	1.34	1.11	0.96	0.84	0.75	.....	0.59	.....	.....	.....	.....
Means	1.32	1.18	1.04	0.95	0.83	0.78	0.74	0.71	0.70	0.73	0.69
P. M.											
July 20	.....	1.05	0.98	0.86	0.77	0.70	.....	.....	.....	.....	.....
21	.....	1.00	0.82	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	1.18	.....	.....	.....	.....	.....	.....	.....	.....	.....
Means	.....	1.08	(0.90)	(0.86)	(0.77)	(0.70)	.....	.....	.....	.....	.....
A. M.											
Aug. 3	.....	1.10	0.92	.....	.....	.....	.....	.....	.....	.....	.....
7	1.07	0.84	0.66	0.59	0.52	0.44	.....	.....	.....	.....	.....
8	1.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	0.84	0.75	0.68	.....	.....	.....	.....
16	.....	1.10	1.01	0.91	0.81	0.71	0.63	0.57	.....	.....	.....
17	1.28	.....	.....	0.83	0.76	.....	.....	.....	.....	.....	.....
20	.....	0.96	0.84	0.73	0.65	0.61	0.54	0.49	0.44	0.40	0.37
21	.....	.....	0.79	0.68	0.59	0.52	0.47	0.42	.....	.....	.....
22	.....	1.30	1.17	1.10	1.02	0.95	0.88	0.80	0.74	0.70	0.66
23	.....	1.01	0.84	0.75	0.67	0.63	.....	.....	.....	.....	.....
24	.....	.....	0.89	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	0.79	0.75	0.69	0.62	.....
31	1.25	1.18	1.04	0.94	0.86	0.79	0.72	0.65	0.59	0.54	.....
Means	1.15	1.07	0.91	0.82	0.75	0.68	0.67	0.61	0.62	0.56	(0.52)
P. M.											
Aug. 6	.....	0.79	0.68	0.59	0.49	0.41	0.33	.....	.....	.....	.....
13	1.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	.....	1.04	.....	.....	.....	.....	.....	.....	.....	.....	.....
Means	(1.40)	(0.92)	(0.68)	(0.59)	(0.49)	(0.41)	(0.33)	.....	.....	.....	.....
A. M.											
Sept. 4	.....	1.22	1.11	1.00	0.91	0.84	0.79	0.74	0.69	0.64	0.59
5	.....	1.32	1.23	1.15	1.07	1.00	0.93	0.88	0.83	0.78	0.72
7	1.27	1.14	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	1.33	1.20	1.07	.....	.....	.....	.....	.....	.....	.....
10	1.45	1.42	1.31	1.21	1.11	1.04	0.99	0.95	0.91	0.86	0.81
13	.....	.....	.....	1.14	1.06	0.99	0.93	0.88	0.83	0.79	0.75
14	.....	.....	.....	1.14	1.08	1.03	0.98	0.90	0.86	0.81	0.77
18	.....	1.30	1.21	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	0.96	0.82	0.74	0.68	0.62	.....	.....	.....	.....
22	.....	1.11	0.96	0.84	0.74	0.65	0.60	0.53	.....	.....	.....
23	.....	1.06	0.95	0.83	0.72	0.62	0.52	0.44	0.42	.....	.....
26	.....	.....	1.31	1.23	1.14	1.05	1.00	0.94	0.89	0.86	.....
27	.....	1.37	1.29	1.18	1.09	1.02	0.95	0.87	0.81	0.76	.....
28	.....	1.48	1.40	1.32	1.26	1.20	1.15	1.09	1.04	1.00	0.96
29	.....	1.28	1.17	1.07	1.00	0.94	0.89	0.83	0.77	0.71	0.67
30	.....	.....	1.05	0.93	0.82	0.73	.....	.....	.....	.....	.....
Means	(1.36)	1.28	1.17	1.07	0.98	0.91	0.86	0.82	0.80	0.80	0.75
P. M.											
Sept. 2	.....	1.17	0.98	0.87	0.81	0.75	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	0.85	0.77	0.71	0.66	0.61	0.57
10	.....	1.42	1.31	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	1.24	1.13	1.03	0.94	0.86	0.80	0.75	0.69	0.65
15	.....	1.41	1.29	1.21	1.12	1.02	0.94	0.88	0.83	0.79	.....
16	.....	.....	1.22	1.13	1.06	1.00	0.93	0.85	0.78	.....	.....
22	.....	1.11	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	.....	1.33	1.24	1.13	1.05	0.97	0.90	0.85	0.83	.....	.....
27	.....	1.22	.....	.....	0.79	.....	.....	.....	.....	.....	.....
28	.....	1.46	1.35	1.26	1.18	1.11	1.05	1.00	0.94	0.89	0.86
29	.....	1.31	1.23	1.15	1.05	0.94	.....	.....	.....	.....	.....
Means	.....	1.30	1.23	1.13	1.01	0.95	0.91	0.85	0.80	0.74	0.69